

U.S. 'noted' CUNs – 2003 round of nominations

Decision XV/54 of the recent Meeting of the Parties in Nairobi reads:

Decision XV/54. Categories of assessment to be used by the Technology and Economic Assessment Panel when assessing critical uses of methyl bromide

Recognizing that Parties had difficulty in taking a decision on the appropriate amount of methyl bromide to use for critical uses,

Mindful that exemptions must comply fully with decision IX/6 and are intended to be limited, temporary derogations from the phase-out of methyl bromide,

1. To invite Parties with nominations that are currently categorized as “noted” in the Technology and Economic Assessment Panel 2003 supplementary report to submit additional information in support of their nominations, using the comments by the Technology and Economic Assessment Panel/Methyl Bromide Technical Options Committee in the October 2003 supplementary report as a guide to the additional information required. The Methyl Bromide Technical Options Committee Co-Chairs will provide additional guidance to assist Parties concerning the information required if so requested. Parties are requested to submit additional information to the Ozone Secretariat by 31 January 2004;
2. To request the Methyl Bromide Technical Options Committee to convene a special meeting, which should be held in sufficient time to allow a report by the Technology and Economic Assessment Panel to be released to the Parties no later than 14 February 2004;
3. To request the Technology and Economic Assessment Panel to evaluate the critical-use nominations for methyl bromide that are currently categorized as “noted” and recategorize them as “recommended”, “not recommended” or “unable to assess”.

The ‘noted’ category was introduced particularly to cover situations where MBTOC could not determine from the nomination, from technical information contained in other nominations, and from its own expertise and reference materials why some alternatives were not feasible in the specific circumstances of at least part of the nomination, but where it “noted” statements in the nomination that alternatives were not appropriate.

Those CUNs that were considered by the nominating Party to be not *economically* feasible, but related to methyl bromide uses with acknowledged alternatives, were also placed in the ‘noted’ category in the absence of specific guidance on assessment of ‘economic feasibility’ as referred to in Dec. IX/6.

In order to assist the process given in Dec. XV/54, MBTOC is requesting specific supplementary information from those Parties with CUNs in the ‘noted’ category that have requested additional guidance as in Dec. XV/54 (3). The U.S. has nine nominations in this category.

These additional notes should be read in conjunction with the evaluations provided in the TEAP report of October 2003.

In addition to addressing the general questions and specific comment given below, the Party may wish to provide other information to address the points raised in the comments on the nominations given in the TEAP reports of May and October 2003.

General questions

Barrier films and MB/Pic mixtures

U.S. users with CUNs in the 'noted' category, currently using MB for soil treatment, already tend to use low rates of MB when calculated on a 'per hectare' basis. When calculated on a 'per treated area' basis this can be higher. Rates on a 'per hectare' basis can typically be around 150 kg/Ha. The reduction from historically higher levels has been made possible through adoption of MB/pic mixtures, better tarping and adoption of strip treatments in place of broadacre treatments.

These industries with CUNs in the 'noted' category may be able to further reduce the CUN amount by reducing the proportion and quantity of MB in MB/Pic mixtures applied per unit area of soil. The Party is requested to demonstrate that methods that use the lowest possible practical rate of MB have been considered in calculation of the CUN amount required, as consistent with Dec. IX/6(1,b,i). In particular, this may be possible where industries were historically using 98:2 or 70:30 mixes of MB/Pic but now could use mixes (e.g. 50:50) with lower proportions of MB. Treatments formerly on a broadacre basis may now be converted to strip treatments with consequent further savings in methyl bromide. Use of tarps with low permeability and reduction in rate of product applied per unit area of soil also offer options to reduce the amount requested.

Q1 – Is there scope for further reduction in the nominated quantities of MB through refinement of the processes given above prior to and during 2005? In particular, adoption of MB/chloropicrin mixtures containing a reduced MB component (e.g. 57:43 MB:Pic or lower where registered), reduced dosage in conjunction with increased exposure periods with tarps of lower permeability, and further use of strip treatments, reduced frequency of fumigations, or other measures.

Part of the argument against use of higher proportions of chloropicrin (>35%) in fumigant mixes is that they are said to increase vegetative growth at the expense of fruit production in strawberries. Are there published studies on this? It is notable that there is some commercial use of 100% chloropicrin in California for strawberry production and that the 57:43 MB:Pic formulation is widely used.

Where reductions are feasible, the Party is requested to reassess the CUNs and provide new nominated quantities.

Township caps and buffer zones

The use of 1,3-dichloropropene (1,3-D) is restricted in some U.S. jurisdictions through local regulations known as ‘Township caps’. This may limit the area that can use 1,3-D or 1,3-D/Pic mixtures as alternatives to MB-based treatments. The local regulation limits the total quantity of 1,3-D that can be used in an area. Currently in at least some relevant areas a 2X cap is in operation, allowing twice the basic cap to be used and increasing the area that can potentially where 1,3-D and mixtures containing 1,3-D can be used in place of MB.

Q2 - Is there scope for reduction in the nominated quantities for 2005 in those areas where a 2X cap is currently in operation? The Party is requested to recalculate nominated MB quantity in the affected CUNs on the basis of a 2X cap or to provide information on the specific circumstances that prevent this increased usage from being a feasible alternative to MB in 2005.

Recent developments

Data, on which the 2003 round of nominations was based, were assembled by the nominating Parties a considerable time prior to submission in order to allow time for due process in the national phase of evaluation. In some cases, more recent information has become available that has decreased the uncertainty associated with particular alternatives to MB apparently in the circumstances of the nomination. Data available to MBTOC at the time of evaluation (October 2003) may have led MBTOC to place particular nominations in the ‘noted’ category.

It would be useful to MBTOC, for the purposes of confirming need for nominated quantities of MB for particular CUNs, to have the usage figures for 2002 for these uses.

Q3 – Parties are requested to supply MB usage figures (quantity used, hectares treated) for 2002, where available, for the nominated uses in the ‘noted’ category and to reassess the quantities of MB nominated where uncertainty at the time of initial nomination led to a conservative value being nominated, but where now a reduced quantity is feasible for 2005.

Specific Comment

Extracts from the October 2003 TEAP Supplementary Report on Critical Use Nominations relating to the particular CUN are given below in *italics*.

Chrysanthemum cuttings - rose plants (nursery) CUN2003/057

MBTOC notes that 22.9 tonnes of MB have been nominated for CUE for rose nurseries and 6.5 tonnes for chrysanthemum propagation. The CUN recognises that

there are alternatives for production of chrysanthemum cuttings, but states it is not economically feasible to change over to the chosen alternative (steam) prior to 2005. Some time is required to implement alternatives. For rose nurseries there are several alternatives in use commercially in other countries, notably substrate production. From the information provided on the latter sector, MBTOC could not determine why alternatives were not feasible in the specific circumstances of the nomination, but accepts statements in the nomination that alternatives were not appropriate.

Chrysanthemum cuttings – no additional requests

Rose plants – **Q4** - Further clarification is requested on why alternatives, principally 1,3-D/Pic mixtures, cannot be used for at least some of this nomination in 2005 and also whether a proportion cannot be grown in substrates. Rose plants in diverse climates are successfully produced in substrates (containerised systems). These systems offer substantial commercial advantages, at least in some situations, despite the significant conversion cost. Well-designed substrate systems in operation in some regions do not suffer from the disadvantages described in the supplementary CUN of Sept 03 (i.e. “the cut flower rose industry has determined that field grown roses are more vigorous, produce more flowers and are longer lived”). The basis for the statement (p.4) that “the cut flower rose industry in the U.S. will only buy field grown plants” is requested.

Q5 - The supplementary CUN of Sept 2003 estimates a yield loss of 5-10% if California rose growers use 1,3-D, and the nomination is based on 1X Township cap restrictions on 1,3-D. The CUN of Feb 03 discusses some alternatives. Is any additional information available about alternatives relevant to this crop and is the yield loss reported in the CUN still to be expected under optimised use procedures for 1,3-D-based systems and other alternatives? If so, technical results of trials or commercial practice are requested, with supporting economic information, if available.

Q6 - The CUN of Sept 03 mentions that California rose growers used MB doses of 31g/m² in 2002. However, the calculations in Table 4 use 34.7 g/m². It appears that this could be recalculated as 65 x 310 = 20,150 kg MB. Is it appropriate and feasible to reduce the nomination thus, and is there further scope for reduction such as based on reduced overall dosages use of less pervious tarping, strip treatments and/or extended exposure times?

Dried fruit, beans & nuts **CUN2003/048**

MBTOC notes that 86.753 tonnes of MB has been nominated for this use. MBTOC notes that registration, and possibly logistical changes, will be required in order to enable implementation of alternatives for rapid disinfestation.

Q7 - The Party is requested to confirm that the quantity nominated is restricted to those situations where the available facilities, restrictions on time available for treatment and other factors require the use of methyl bromide and where slower acting

processes, notably phosphine fumigation, are not technically and economically feasible. MBTOC recognises that some industries covered by this CUN have successfully made the transition from MB.

Forest nursery seedlings CUN2003/052

MBTOC notes that 195.512 tonnes of MB have been nominated for this use. This was on the basis that use of the main alternative, containerisation, was not economically feasible in the context of the nomination.

The principal argument for a CUE for the forest nurseries in this CUN is an economic one, related to the cost of containerised production of forest seedlings. MBTOC also recognises the economic argument related to transport of containerised stock to remote localities with difficult access. The CUN and supplementary information refer to single treatments such as metham sodium and dazomet as MB alternatives, but they are regarded as uneconomic under the circumstances of the nomination. The industry already uses 76:33 or 50:50 MB:Pic mixtures, as broadcast applications.

Containerised production without use of MB is well established in certain parts of the forest nursery industry in the U.S. MBTOC has been informed that approx.180 forest nurseries (about 50% of the nurseries) in the U.S. currently produce at least some forest seedlings in containers.

Q8 - The CUN and supplementary information refer to single treatments such as metham sodium and dazomet as MB alternatives. However it is possible that other treatments, such as some fumigant mixtures, may have been successful, presenting feasible alternatives to MB in the circumstances of the nomination. Did any combinations or specific application methods provide results close to MB fumigation in the specific circumstances of the nomination? If so, please provide technical results of trials or commercial practice.

Mills and Processors CUN2003/051

MBTOC notes that 536 tonnes of MB has been nominated for this use. MBTOC also notes that technically feasible alternatives have been adopted in diverse types of mills and food processing facilities in the United States and other countries. The United States is requested to ensure that MB is restricted to those premises and circumstances where alternatives are not technically and economically feasible.

MBTOC is aware of apparently technically and economically feasible alternatives have been adopted successfully in commercial practice in diverse types of mills and food processing facilities in the United States and other countries. The CUN states that such measures are not feasible in the nomination on either technical or economic grounds. In particular it is stated that heat disinfestation is uneconomic to install. The possibility of using transportable heating systems does not appear to have been considered, yet is apparently available in at least parts of the U.S.

Q9 - MBTOC seeks further information on how the estimates were made that were used to derive the nominated amounts and, particularly on the proportion of structures judged unsuitable for heat disinfestation or IPM approaches because of structural inadequacies or other factors, and how this judgement was made. Alternatives in commercial use include combinations of rigorous sanitation programmes and IPM processes supplemented by heat disinfestation (permanently installed or transportable equipment) and/or phosphine-based treatments (where corrosion risk can be managed).

Nursery float trays for tobacco seedlings
CUN2003/054

MBTOC notes that 1.323 tonnes of MB has been nominated for this use. The nomination stated that no satisfactory fungicide to control Rhizoctonia fungal spores in pool water was registered in the United States for use specifically on tobacco transplant (float) trays. This could result in higher levels of fungal contamination of the trays than would be the case in other countries where such fungicides were registered. Alternatives to decontaminate fungal spores from tobacco transplant trays are under consideration. MBTOC notes that apparently suitable alternatives are in use in other countries. MBTOC wishes to emphasise that this exemption relates to the specific circumstances of some tobacco seedling (float) trays and there are satisfactory alternatives to MB in widespread use in the nursery industry for seedling trays.

MBTOC has information that steaming is in commercial use for tobacco float trays in the U.S. (e.g. <http://www.ca.uky.edu/agc/pubs/id/id132/id132.htm> B. Pearce and G. Palmer, Extension Tobacco Specialists; W. Nesmith, Extension Plant Pathologist; L. Townsend, Extension Entomologist). The main technical constraint, as stated in the CUN, is that temperatures have to be carefully controlled to avoid damaging the trays. However it is said to be more effective than MB treatment.

Q10 - MBTOC seeks further information as to why steam treatment cannot be used in the specific circumstances of this nomination.

Smokehouse Ham (building and product)
CUN2003/048

MBTOC notes that 0.907 tonnes of MB has been nominated for this use. There were no technically feasible alternatives known to MBTOC for combined treatment of both the smokehouse (structure) and hams (foodstuff).

No questions – placed in ‘noted’ category as MBTOC did not have expertise on the Committee to make an evaluation at that time (October 2003).

Strawberry fruit – field
CUN2003/059

MBTOC notes that a CUE for 2468.87 tonnes has been requested. The application is based on the technical grounds that no alternatives were available for moderate to severe pest pressure for nutsedge in certain areas and that certain topographies and regulatory issues prevent the use of possible alternatives. MBTOC acknowledges that control of nutsedge is difficult, even when MB is used, but notes that several fumigant alternatives are providing effective control of pests in many circumstances (e.g. 1,3-D/Pic, Pic alone, and metham sodium and Pic used in combination). MBTOC could not determine why some of these alternatives were not feasible in the specific circumstances of the nomination, but accepts statements in the nomination that alternatives were not appropriate.

A number of countries have substantially reduced their consumption of MB recently in the production of strawberry fruit, particularly through adoption of alternatives and fumigant mixtures with low proportions of MB (e.g. Spain, Italy, Australia).

Recently, there have been reported changes in fumigation practices, particularly in California, that suggest that methyl bromide alternatives are performing well in at least some areas and that there may be scope for reduction in the quantities of MB nominated for 2005 for strawberry fruit. In particular, the changes during this period that will influence this amount are, the change from broadcast to strip fumigation, the uptake of InLine™ formulation of 1,3-D/Pic and the reduction of MB/Pic in mixtures, i.e. changes from 67:33 to 57:43 or even lower proportions of MB. Use of less permeable tarps, combined with increased exposures and decreased dosage, would also seem to have potential.

Q11 - The CUN of Sept 2003 cites yield loss data from studies on potential MB alternatives prior to 1999 (Table 3). Further advances in MB alternatives have been made since that time. In particular, improved application methods and other combinations of fumigants/ chemicals have repeatedly shown similar efficacy to MB/Pic mixtures in broadscale studies, e.g. IR-4 and others. Information available to MBTOC suggests that there is little yield difference from several potential alternatives. In the absence of specific circumstances or restrictions, it appears that there are several available alternatives for at least part of this CUN. In those circumstances where the Party believes alternatives cannot be used due to nutsedge infestation, it is requested that the Party provide substantiating data from recent studies (after 1999) from trials on areas with moderate to high nutsedge infestation.

Q12 - MBTOC recognizes that regulatory restrictions associated with environmental concerns restrict the use of 1,3-D (Township caps in California, karst topography in Florida, and buffer zones in the southeast U.S.). However some other fumigants/chemicals have been found effective in controlling the key soilborne pests affecting strawberry fruit production, particularly chloropicrin EC alone or in combination with metham sodium. To what extent could these techniques be adopted in the areas involved in this CUN where 1,3-D cannot be used for regulatory reasons?

Q13 - A 1,3-D/ Pic combination (InLine™) is in commercial use as an alternative to MB in at least some areas covered by this CUN. The use of 1,3-dichloropropene (1,3-

D) is restricted in some jurisdictions through Township caps. Currently in at least some relevant areas a 2X cap is in operation, allowing twice the basic cap to be used and increasing the area that can potentially where 1,3-D and mixtures containing 1,3-D can be used in place of MB. Information is requested on what change to the nominated quantity can be made if a 2X cap was in operation in 2005.

Tomato – field
CUN2003/062

MBTOC notes that a CUE of 2865.3 tonnes have been requested, based on the technical grounds that no alternatives were available for moderate to severe pest pressure for several diseases, root knot nematode and nutsedge in specific areas and that certain topographies and regulatory issues prevent the use of possible alternatives. MBTOC notes that several fumigant alternatives are providing effective control of pests (e.g. 1,3-D/Pic, Pic alone, and metham sodium and Pic used in combination) and that a number of herbicides are available to control nutsedge. MBTOC could not determine why some of these alternatives were not feasible in the specific circumstances of the nomination, but accepts statements in the nomination that alternatives were not appropriate.

Q14 - The CUN of Sept 2003 presents some yield data based largely on 1,3-D/chloropicrin (Table 2). The CUN indicates that where published studies of yields under conditions of moderate-severe key pest pressure were not available, estimates were developed by contacting university professors and experts. MBTOC notes that recent studies in Florida, e.g. IR-4 and others, have trialled combinations of fumigants/chemicals and shown performance equivalent for MB that appear to have reduced the need for MB. Comparative yield data is requested (since 2000) from recent studies showing specific soil preparation information and key alternatives that have produced results comparable to MB under good commercial practice, particularly those carried out under medium or high nutsedge pressure.

Turfgrass
CUN2003/063

MBTOC notes that 352.194 tonnes of MB have been nominated for these uses. MBTOC considers that several alternatives, particularly dazomet and steam, are suitable alternatives for most of the uses in this nomination. From the information provided, MBTOC could not determine why alternatives were not feasible in the specific circumstances of the nomination, but accepts statements in the nomination that alternatives were not appropriate.

Q15 - MBTOC recognizes that the sector has reduced the formulations of MB to 67:33 and sometimes to 50:50. What are the constraints to reducing the MB content of the fumigant mixture further? There may also be scope for dosage rate reduction through adoption of less permeable tarping combined with increased exposure periods. It is notable that the current use rate of MB is high, 480 and 610kg/Ha in Table 2 of the supplementary nomination. Have these rates been adjusted to take into

account the use of chloropicrin in the fumigant mixtures and, if so, are such high rates necessary against the target pests?

Q16 - From the CUN and supplementary information, it appears that an important target of current MB use in the sector is nutsedge control. What proportion of the nomination is concerned specifically with nutsedge control?
